

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-14. (Canceled)

15. (Currently Amended) A reinforcing bar binder comprising:

a storing chamber provided in a main body of the reinforcing bar binder for mounting a wire reel around which a wire for binding a reinforcing-bar is wound, the wire being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, and the storing chamber being provided with a detecting device; and

a control circuit that judges a detection output of the detecting device, the detecting device comprising a first detecting apparatus and a second detecting apparatus; wherein

the first detecting apparatus comprising a contact-type sensor which contacts ~~detects~~ at least one first to-be-detected portion provided on the wire reel to detect an amount of rotation of the wire reel;

the second detecting apparatus detects at least one second to-be-detected portion provided on the wire reel passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus; and

the control circuit counts the at least one second to-be-detected portion detected by the second detecting apparatus.

16. (Canceled)

17. (Currently Amended) The reinforcing bar binder according to Claim 15, wherein ~~the first detecting apparatus is a contact-type sensor and~~ the second detecting apparatus is a non-contact type sensor.

18. (Canceled)

19. (Currently Amended) A wire reel utilized in a reinforcing bar binder comprising a control circuit and a storing chamber provided in a main body of the reinforcing bar binder for mounting the wire reel around which a wire for binding a reinforcing-bar is wound, the wire being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, wherein

the storing chamber is provided with a first detecting apparatus comprising a contact-type sensor and a second detecting apparatus;

the wire reel is provided with a first to-be-detected portion and a second to-be-detected portion coupled to the control circuit;

the first detecting apparatus contacts the first to-be-detected portion ~~is detected by the first detecting apparatus~~ to detect an amount of rotation of the wire reel; and

the second to-be-detected portion passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus is counted by the control circuit.

20. (Currently Amended) The wire reel according to Claim 19, wherein ~~the first detecting apparatus is a contact-type sensor and~~ the second detecting apparatus is a non-contact type sensor.

21. (Currently Amended) ~~A~~ The wire reel according to Claim 19, utilized in a reinforcing bar binder comprising a control circuit and a storing chamber provided in a main body of the reinforcing bar binder for mounting the wire reel around which a wire for binding a reinforcing-bar is wound, the wire being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, wherein

the storing chamber is provided with a first detecting apparatus and a second detecting apparatus;

the wire reel is provided with a first to-be-detected portion and a second to-be-detected portion coupled to the control circuit;

the first to-be-detected portion is detected by the first detecting apparatus to detect an amount of rotation of the wire reel; and

the second to-be-detected portion passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus is counted by the control circuit, wherein

the wire reel is provided with a flange and a round concave portion formed on a central portion of the flange, and

the first to-be-detected portion is formed on the flange and the second to-be-detected portion is housed within the round concave portion.

22. (Canceled)

23. (Currently Amended) A wire-reel identifying method utilized with a reinforcing bar binder comprising a storing chamber provided in a main body of the reinforcing bar binder for mounting a wire reel around which a wire for binding a reinforcing-bar is wound, the wire being fed by rotating the wire reel and being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, the method comprising:

detecting with a first detecting apparatus comprising a contact-type sensor an amount of rotation of the wire reel, wherein the first detecting apparatus contacts a first to-be-detected portion provided on the wire reel;

detecting with a second detecting apparatus a second to-be-detected portion provided on the wire reel during rotation of the wire reel detected by the first detecting apparatus; and

~~counting, during an amount of rotation of the wire reel detected by a first detecting apparatus for detecting a first to-be-detected portion, a~~ the ~~second to-be-detected portion provided on the wire reel and passing a~~ detected by the ~~second detecting apparatus.~~

24. (Canceled)

25. (Currently Amended) ~~A~~ The wire-reel identifying method ~~according to Claim 23, further comprising:~~ utilized with a reinforcing bar binder comprising a storing chamber provided in a main body of the reinforcing bar binder for mounting a

wire reel around which a wire for binding a reinforcing-bar is wound, the wire being fed by rotating the wire reel and being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, the method comprising:

counting, during an amount of rotation of the wire reel detected by a first detecting apparatus for detecting a first to-be-detected portion, a second to-be-detected portion provided on the wire reel and passing a second detecting apparatus;

providing with the wire reel a flange and a round concave portion formed on a central portion of the flange; and

forming the first to-be-detected portion on the flange and housing the second to-be-detected portion within the round concave portion.

26. (Canceled)

27. (Currently Amended) The wire-reel identifying method according to Claim 23, wherein ~~the first detecting apparatus is a contact-type sensor and the~~ second detecting apparatus is a non-contact type sensor.

28. (Canceled)

29. (Previously Presented) The wire-reel identifying method according to Claim 25, wherein the first detecting apparatus is a contact-type sensor and the second detecting apparatus is a non-contact type sensor.

30. (Canceled)

31. (Currently Amended) A wire-reel identifying method comprising:
providing a first to-be-detected portion and a second to-be-detected
portion on a wire reel;
detecting the first to-be-detected portion with a first detecting apparatus
comprising a contact-type sensor to detect an amount of rotation of the wire reel,
wherein the first detecting apparatus contacts a first to-be-detected portion;
detecting the second to-be-detected portion with a second detecting
apparatus during rotation of the wire reel; and
counting with a control circuit the second to-be-detected portion
detected with the second detecting apparatus to detect a type of the wire reel.

32. (Canceled)

33. (Currently Amended) ~~A~~ The wire-reel identifying method ~~according to~~
~~Claim 31, further comprising:~~
providing a first to-be-detected portion and a second to-be-detected
portion on a wire reel;
detecting the first to-be-detected portion with a first detecting apparatus
to detect an amount of rotation of the wire reel;
detecting the second to-be-detected portion with a second detecting
apparatus during rotation of the wire reel;

counting with a control circuit the second to-be-detected portion
detected with the second detecting apparatus to detect a type of the wire reel;

providing with the wire reel a flange and a round concave portion
formed on a central portion of the flange; and

forming the first to-be-detected portion on the flange and housing the
second to-be-detected portion within the round concave portion.

34. (Currently Amended) The wire-reel identifying method according to
Claim 31, wherein ~~the first detecting apparatus is a contact type sensor and the~~
second detecting apparatus is a non-contact type sensor.

35. (Currently Amended) ~~A~~ The wire reel according to Claim 19, further
~~comprising~~ utilized in a reinforcing bar binder comprising a control circuit and a
storing chamber provided in a main body of the reinforcing bar binder for mounting
the wire reel around which a wire for binding a reinforcing-bar is wound, the wire
being twisted for binding the reinforcing bar after it is wound around the reinforcing
bar, wherein

the storing chamber is provided with a first detecting apparatus and a
second detecting apparatus;

the wire reel is provided with a first to-be-detected portion and a
second to-be-detected portion coupled to the control circuit;

the first to-be-detected portion is detected by the first detecting
apparatus to detect an amount of rotation of the wire reel; and

the second to-be-detected portion passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus is counted by the control circuit, wherein the wire reel further comprises:

a pair of flanges for receiving the wire therebetween; and

a boss portion formed on one of the flanges, wherein the first to-be-detected portion is formed outside the boss portion and the second to-be-detected portion is formed inside the boss portion.

36. (Previously Presented) The wire reel according to Claim 35, wherein the boss portion surrounds a round concave portion formed in a hub portion of the wire reel, and the round concave portion houses at least one fixation shaft having a light reflecting mark forming the second to-be-detected portion.

37. (Previously Presented) The wire reel according to Claim 36, wherein the boss portion has a stepped concave portion at an inner peripheral edge, and the stepped concave portion has a depth which substantially reaches the light reflecting mark provided on the fixation shaft.

38. (Previously Presented) The wire reel according to Claim 35, wherein the first to-be-detected portion is formed by a protrusion on an outer peripheral edge of the boss portion.

39. (Previously Presented) The wire reel according to Claim 38, wherein the protrusion is formed to have a trapezoid shape and includes inclined edges at its opposite sides.

40. (Previously Presented) The reinforcing bar binder according to Claim 15, wherein the control circuit receives a first signal when the first detecting apparatus detects the at least one first to-be-detected portion and a second signal when the first detecting apparatus detects another first-to-be-detected portion on the wire reel.

41. (New) The wire reel according to Claim 21, wherein the first detecting apparatus is a contact-type sensor and the second detecting apparatus is a non-contact type sensor.